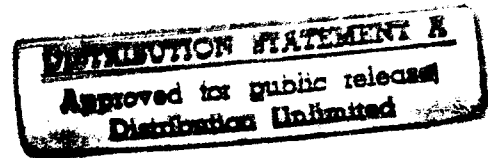


The Gulf War air boss says the Pentagon hasn't grasped the importance of long-range stealthy airpower.



What We Should Have Learned in Desert Storm, But Didn't

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The Cold War ended shortly after Operation Desert Storm, giving the United States a historic opportunity to rapidly incorporate the lessons learned in the Persian Gulf War and to restructure its forces--especially its bomber force--for the twenty-first century.

Five years later, it seems clear that we have squandered much of the valuable insight gained in Desert Storm. Evidence of this can be seen in many assumptions in the Defense Planning Guidance underpinning the 1993 Bottom-Up Review (BUR) of Defense Needs and Programs and the 1995 Heavy Bomber Force Study. The most recent crisis in Iraq exposed our weaknesses. It also underscored the vital importance to the US of long-range, stealthy airpower.

To illustrate my point, I would like to review some of the lessons from the Gulf War that should have--but clearly have not--guided our bomber modernization strategy.

Lesson One: Surprise attack is inevitable and therefore must be hedged against.

The heavy bomber study assumed our enemy would give us fourteen days of unobstructed build-up time before attacking. This jibes neither with history nor military logic. We were surprised at Pearl Harbor, in Korea, and again in the Gulf. Iraq's invasion of Kuwait took us completely by surprise. We were aware that Saddam Hussein posed a military threat to his neighbors, and in late July 1990 we knew he had moved his forces into position for an attack. Yet, we and our allies had difficulty accepting the threat before us, and when the attack came, we were ill-configured to respond.

I will never forget those long dark nights in August 1990 when we struggled desperately to build up our forces knowing that at any time the Iraqi Army could easily push across Saudi Arabia's border and capture not only the majority of the world's oil supply but also the air bases and ports necessary for deploying our forces. Fortunately, Saddam stayed put in Kuwait, and the rest, as they say, is history. But he and other potential aggressors learned a valuable lesson: Don't give America six months.

In the years since, Saddam has tested our response capabilities with feints against Kuwait. In October 1994, he moved 70,000 troops and 1,000 tanks to the Kuwaiti border well before we could respond. According to the Joint Chiefs of Staff, several days elapsed in which Iraq could have once again taken Kuwait and made a run at the Saudi oil fields. This has only reinforced the notion among our likely adversaries that they can accomplish at least their initial military objectives before we can stop them. And, since surprise provides the attacking side such enormous military leverage, we must assume that any future US adversary is likely to do everything possible to mount "a bolt from the blue" attack. History shows that no matter how much you spend on intelligence, you will always be vulnerable.

Hedging against surprise should have played a key role in the BUR and the heavy bomber study.

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Hedging against surprise should have played a key role in the BUR and the heavy bomber study. Clearly, it did not. In both studies, the premium should have been placed on forces, such as the B-2, that can respond rapidly, independently, and decisively to fast-breaking crises. Their rosy assumptions about warning obscured the value of rapid response and the B-2's vital role.

Lesson Two: Future adversaries will be armed with weapons of mass destruction (WMD) and the means to deliver them.

The Defense Planning Guidance posited a Gulf enemy with no nuclear capability, no biological weapons capability, and only a limited chemical weapons capability. This flies in the face of what we feared about Iraq prior to the Gulf War and the startling postwar revelations about the size, scope, and complexity of Iraq's WMD and ballistic missile programs.

Iraq's potential use of nuclear, biological, or chemical weapons dominated our thinking while planning the Gulf War air campaign. The potential for chemical warheads on Scud missiles raised the specter of massive casualties in Saudi Arabia, Israel, and Bahrain. Although in 1990 we were reasonably confident that Saddam had not developed a nuclear bomb, we were far from certain that he wouldn't use nuclear waste material to create a poisonous warhead for his missiles and **airplanes** to deliver.

We therefore set out to counter these threats on a broad front, including air attacks on production, storage, and deployed weapons facilities. Our strongest defense was making available to soldiers and civilians the best protective suits and masks. It was our perceived ability to survive chemical attacks that led Saddam to decide against launching them in the first place.

Many take false comfort in the notion that our nuclear arsenal deterred Saddam from unleashing his WMD. Personally, I don't think our nuclear deterrent was ever truly tested. Would Saddam have kept his WMD holstered if we'd marched on Baghdad, thus threatening his very existence? Would he have used his WMD and missile arsenals differently if he had expected the US to intervene? Might he have even deferred his invasion until after he had developed his first nuclear weapon? The Gulf War raised many more questions about the post-Cold War viability of our nuclear deterrent than it answered.

Other than our preemptive air strikes and passive defense measures, we had few options. In the end, Saddam kept WMD on the shelf. What about next time? India's former Army Chief of Staff said, "The lesson of Desert Storm is, 'Don't fight with the United States without a nuclear weapon.' " If you believe intelligence reports, potential adversaries are taking this lesson to heart.

Gen. Joseph P. Hoar, USMC, Gen. H. Norman Schwarzkopf's successor at US Central Command, has said the presence of any significant WMD in CENTCOM's area of responsibility would require the US to fundamentally rethink its ground and air components and the concept of operations that drives them. I could not agree more. The proliferation of WMD and ballistic missiles means that our current strategy of pouring thousands of fighters and hundreds of thousands of troops into our enemy's back yard is no longer viable. The best hedge against the emerging threat is to shift as much of the power-projection burden as we can--as fast as we can--to long-range systems able to fight effectively from beyond WMD range. This should have been a core finding of the BUR, which would have led to an increased emphasis on the bomber force and thus obviated the need for a heavy bomber study.

An adequate B-2 fleet would dramatically enhance US counterforce capabilities. It would allow us to credibly threaten the destruction of aggressor WMD programs. In conflicts with WMD-armed adversaries, such a capability would allow us to conduct relatively risk-free counterforce strikes before making a large-scale and vulnerable force deployment. Long-range counterforce operations could be protracted, allowing the US to sustain strikes until it is deemed "safe" to enter the theater.

Lesson Three : The revolutionary combination of stealth and precision must be exploited.

Desert Storm marked the first large-scale employment of stealth aircraft--the F-117--equipped with

precision weapons. The combination has revolutionized warfare. The F-117's stealthiness enabled us to achieve surprise every day of the war, attack any target we wanted, and leverage the capabilities of other assets. The F-117s delivered the first strikes, destroying a wide array of critical targets and paralyzing the Iraqi air defense network. Their attacks on the radar sites and command, control, and communications bunkers that controlled the Iraqi defenses opened the door for wave after wave of nonstealthy aircraft to strike effectively and, most important, safely. The F-117's ability to paralyze the Iraqi air defense network in the opening minutes of the war was critical to gaining air superiority, a vital prerequisite to ejecting the Iraqi Army from Kuwait.

The F-117s did more than just pave the way for less-capable aircraft. They allowed us to strike the "heart" of the enemy--downtown Baghdad--with impunity, regardless of the defenses. This allowed us to maintain continuous pressure on the most vital target sets, which dramatically shortened the air campaign. Because we could depend solely on the F-117 to execute this mission, it more than likely reduced nonstealthy aircraft losses by an order of magnitude.

Stealth also provided tremendous flexibility by drastically reducing the support required for F-117 sorties. For example, if our intelligence detected a heavily defended target requiring immediate attention, and only conventional aircraft were available, we were faced with a difficult set of choices. We could either forgo the strike or pull together an elaborate package of escorts, jammers, defense suppressors, and tankers to get our attack aircraft in. This took valuable time and required major planning adjustments. With the F-117, we would just release the new target data and let the pilots take care of the rest.

In 1995, my chief master attack planner from Desert Storm calculated the "value" of stealth, or the stealth "multiplier effect," in a bomber study for the Commission on Roles and Missions of the Armed Forces. He found that, in the first twenty-four hours of the Gulf War air campaign, each F-117 sortie was "worth" sixteen nonstealth sorties. As Iraqi air defenses were whittled down, this ratio leveled off about one to eight--still extraordinary. The B-2, equally stealthy but with eight times the payload and five times the range, multiplies even the F-117 "multiplier" and opens the door to large-scale air campaigns prosecuted from outside the theater. Unfortunately, not many people know this because the commission chose not to publish the data.

Lesson Four: The need to minimize US casualties affects planning, decision-making, and operational effectiveness.

Anyone who has led young US troops into combat can appreciate firsthand how this obligation weighs on your mind. All of us wrestled with the fear that our mistakes would result in the otherwise preventable loss of life. I would visit our air bases, look at the faces of the aircrews, and wonder which ones would not be going home. The specter of pitiful Iraqi soldiers left for dead by their commanders and the knowledge that innocent women and children suffered from our bombs still haunt me.

In planning and executing the air campaign, we emphasized tactics and systems that minimized aircraft losses, even though it limited to some degree the effectiveness of our air attacks. We operated our aircraft at high altitudes, above the reach of most Iraqi air defenses. This increased aircraft survivability, but it also made target acquisition more difficult and reduced bombing accuracy. Casualty concerns also dictated which assets went "downtown." Despite the large number of critical targets in Baghdad, only the F-117 and the Tomahawk cruise missile were used to attack the heavily defended Iraqi capital.

We gave casualty avoidance priority over military effectiveness because it was the morally correct thing to do. The American people have demonstrated unbelievable tolerance at the losses of sons and daughters in battle when they believe in the cause, but no President or general can overestimate the speed at which that patience will disappear if they are perceived to be spending lives foolishly. Public sensitivity to casualties can dominate our political and military decision-making in a crisis.

Without a doubt, rising public sensitivity to casualties increased the attractiveness of airpower. Use of airpower exposes fewer lives to enemy fire than does employment of ground forces. Still, we can do

much better. Long-range airpower leaves fewer aircrew and support personnel within enemy reach. Stealth technology drastically reduces the chances of our aircraft being shot down.

Consequences: The Iraq crisis, September 1996, demonstrated the limits on US options.

When Saddam Hussein ignored our warnings recently and sent three Republican Guard divisions into Irbil, in the US-protected no-fly zone in northern Iraq, most, including myself, believed that a strong military response was in order. I was not privy to the military planning that led up to our September 3 response, but I can give you a commander's perspective on what I expected it to look like.

The objectives seemed fairly clear-cut: Halt, if possible, the attack on the Kurds, but definitely hit Saddam where it hurts. "Hurting" a dictator like Saddam means attacking what gives him his hold on power--his military. Presumably, top priority would be given to the Republican Guard forces arrayed on the outskirts of Irbil and to high-value (and thus well-defended) targets in and near Baghdad. Ideally, F-16s and F-15Es operating out of Turkey and Jordan would attack the Iraqi ground forces, while F-117s from Saudi Arabia would go against Baghdad.

These options never materialized. Turkey, Jordan, and Saudi Arabia probably signaled that US air strikes could not be launched from their territory. This effectively prevented us from using USAF landbased fighters and forced us to turn to our independent options: carrier airpower, bombers, and cruise missiles. However, this also raised a set of constraints that, fortunately, I never had to deal with as coalition air commander. Republican Guard forces in the north were beyond reach of carrier airpower, and sending nonstealthy Navy strike planes into Baghdad was far too risky. B-1B and B-52 bombers had sufficient range but lacked required precision munitions and would have been vulnerable to air defenses. (To my knowledge, the precision-capable B-2 had not been integrated into CENTCOM war plans.)

Cruise missiles, meanwhile, require preprogramming, so they could not be targeted against the highly mobile Iraqi forces, and they lack the punch required to destroy the hardened facilities inside Baghdad. Sorely missing was the capability that propelled us to swift victory in Desert Storm--to penetrate Iraqi defenses safely and deliver large, powerful, precision weapons.

Their strike options limited, our planners apparently turned their attention to a strategy that supported extension of the southern no-fly zone. This meant that attacks against fixed, above-ground facilities in sparsely populated southern Iraq were the logical choice because of their vulnerability to cruise missiles. Hence, the rather limited cruise missile attack against air defenses in southern Iraq, as opposed to the Iraqi forces south of Irbil or targets in Baghdad.

These events demonstrate that our military options are limited, and other important options would be available if our military inventory included an adequate number of long-range stealth bombers. The following points summarize these deficiencies and what we can do to redress them.

US global response capabilities are inadequate. The origins of the Irbil attack are most likely found in the October 1994 and August 1995 Iraqi feints against Kuwait. In both cases, Saddam massed forces against Kuwait, then pulled back when US forces began to arrive. Saddam knew from these exercises that we could not deploy our short-range forces quickly enough to stop him from accomplishing his Irbil objectives. Post-Gulf War efforts to shorten deployment times are laudable but amount to tinkering at the margins. If the United States wishes to deter the Saddam Husseins of the world, we must demonstrate the capability to stop them before they can reach their military objectives. This "prompt denial" capability requires one of two things: large numbers of forward-based forces or forces so rapidly deployable as to be "virtually" present abroad. Given US budget constraints and foreign political sensitivities, the first option is probably not feasible. The second certainly is but requires shifting the power-projection burden from slower-deploying short-range ground, sea, and air forces to independently deployable long-range airpower.

US forces are far too dependent on foreign basing. Current US warfighting strategy hinges on the

deployment of short-range fighters and ground forces to foreign bases in the theater of conflict. Desert Storm and the postwar inspections of Iraq's WMD programs underscored the grave risks entailed with such a strategy. The 1996 Iraqi crisis demonstrated that foreign base access cannot be taken for granted. Once Jordan, Saudi Arabia, and Turkey opted out, the entire landbased fighter force was effectively neutralized, leaving US military capabilities seriously circumscribed. Carrier airpower could not compensate. We need the power to fight effectively from beyond the theater, and that means shifting much of the burden to long-range air.

Cruise missiles are no panacea. Cruise missiles are attractive to US decision-makers--and military commanders for that matter--because they minimize the risk of casualties. Many argue that cruise missiles obviate the need for stealthy bombers, but Donald B. Rice, the Secretary of the Air Force during Desert Storm, has pointed out, "This argument fails when considering cost and operational effectiveness." Cruise missiles are too expensive for sustained operations; cost was the reason Washington ordered me to stop firing Tomahawks during the Gulf War. The forty-four cruise missiles fired at Iraq in September cost more than \$100 million--100 times more than an equivalent number of B-2-delivered precision guided munitions. More important, current-generation cruise missiles are not effective against mobile or heavily hardened targets. If the US finds it necessary to truly influence a future Saddam-initiated crisis, planners will have to target hardened and deeply buried facilities inside Baghdad and the highly mobile Republican Guard--and convince the national command authorities of a high probability that no one will get shot down. This demands stealth aircraft and direct-attack precision weapons. Period.

The Gulf War gave me a glimpse into the future of warfare. I saw adversaries who attacked without warning. I saw adversaries armed with WMD and ballistic missiles. I saw an American public that expected our wars to be swiftly won and relatively casualty-free. In 1996, I see the same things, but my confidence that we can overcome these challenges has faded. The difference? In 1991, I returned from the Gulf convinced that tomorrow's air commanders required--and would indeed have--a fleet of sixty or more long-range stealthy bombers. Inexplicably, the B-2 fleet was slashed from seventy-five to twenty, undermining our ability to employ a newly relevant strategy.

The B-2 is the only weapon system in the US inventory free of range, survivability, and lethality limitations that plagued us during the recent Iraqi crisis. B-2s could well be our only practical option for projecting truly decisive power in future regional crises. The planned force is far too small to underwrite a large-scale air campaign. Given the B-2's obvious and unique utility in the new global strategic environment, it is difficult to comprehend how the Pentagon could so actively resist expanding the fleet.

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